

# ABSTRACT

A method of enhancing the efficiency and increasing the duration of action of drugs (e.g. dihydropyridines and anti-bacterials) and particularly of nifedipine and penicillins wherein one or more hydrogen atoms are deuterated and wherein the deuterated drug has unexpectedly improved properties when used in much lower concentrations than unmodified drug. A method for determining the identity and bioequivalency of a new drug is also disclosed wherein the molecular and isotope structure of a new drug is determined by isotope ratio mass spectrometry and compared with the molecular and isotope structure of a known human drug.